

**Before the  
Public Service Commission of South Carolina**

**Docket No. 2020-4-G**

**Annual Review of Purchased Gas Adjustment and  
Gas Purchasing Policies of Piedmont Natural Gas Company, Inc.**

**Testimony & Exhibits of Jeffrey Patton**

**On Behalf Of**

**Piedmont Natural Gas Company, Inc.**



**June 2, 2020**

1 **Q. Please state your name and your business address.**

2 A. My name is Jeffrey Patton. My business address is 4720 Piedmont Row  
3 Drive, Charlotte, North Carolina.

4 **Q. By whom and in what capacity are you employed?**

5 A. I am employed by Duke Energy Corporation (“Duke”) and work on behalf of  
6 Piedmont Natural Gas Company, Inc. (“Piedmont” or the “Company”), a  
7 wholly owned subsidiary of Duke, as the Manager of Pipeline Services.

8 **Q. Please describe your educational and professional background.**

9 A. I graduated from Mississippi State University with a Bachelor of Science  
10 Degree in Mechanical Engineering in 1996, and I graduated from Auburn  
11 University in 1998 with a Master of Business Administration, Finance  
12 concentration. I was employed by Southern Company from 1998 to 2003 in  
13 various roles in Generation Planning and Development, as well as Energy  
14 Marketing. I was employed by Consolidated Edison from 2004 to 2005 as a  
15 Senior Rate Analyst. I served as a Senior Business Financial Analyst at  
16 Progress Energy from 2005 to mid-2008 and was responsible for wholesale  
17 electric revenue forecasting. From mid-2008 to early 2019, I was an  
18 Originator in the Fuels & Systems Optimization Department for Progress  
19 Energy (which merged with Duke), and I was responsible for the procurement  
20 of natural gas supply, transportation and storage services for Duke’s natural  
21 gas-fired power generation facilities. In February 2019 I accepted my current  
22 position as Manager of Pipeline Services.

23 **Q. Please describe the scope of your present responsibilities.**

1 A. My current major responsibilities include the supervision of pipeline capacity  
2 planning and relations, annual design day and daily forecasting for Piedmont  
3 and Duke's Midwest LDCs. In addition, I am responsible for oversight of  
4 Duke's Midwest LDCs' and Piedmont's activities at the Federal Energy  
5 Regulatory Commission ("FERC") regarding interstate pipelines that the  
6 Company utilizes for transportation and storage services.

7 **Q. Have you previously testified before this Commission or any other**  
8 **regulatory authority?**

9 A. I have not previously testified before this Commission. In 2014 I testified  
10 before the Florida Public Service Commission in support of Duke Energy  
11 Florida, LLC's Petition for Determination of Need for the Citrus County  
12 Combined Cycle Power Plant in Docket 20140110.

13 **Q. What is the purpose of your testimony in this proceeding?**

14 A. The purpose of my testimony is to discuss the market requirements of  
15 Piedmont's South Carolina customers, including the projected growth in  
16 those markets, the capacity acquisition policies and practices we employ to  
17 serve those markets, and the efforts undertaken by Piedmont at the FERC on  
18 behalf of its customers to ensure that interstate transportation and storage  
19 services are reasonably priced.

20 **Q. What is the Review Period in this docket?**

21 A. The Review Period is April 1, 2019 through March 31, 2020.

22 **Q. Please give a general description of Piedmont and its market in South**  
23 **Carolina.**

1 A. Piedmont is a local distribution company principally engaged in the purchase,  
2 distribution and sale of natural gas to more than 1 million customers in South  
3 Carolina, North Carolina, and the metropolitan area of Nashville, Tennessee.  
4 Piedmont serves approximately 151,812 customers in the State of South  
5 Carolina. During the Review Period, Piedmont delivered 65,476,084  
6 dekatherms (“dts”) of natural gas to its South Carolina customers.

7 Piedmont provides regulated natural gas service to two distinct  
8 markets – the firm market (principally residential, small commercial and  
9 small industrial customers) and the interruptible market (principally large  
10 commercial and industrial customers). Although Piedmont competes with  
11 electricity for the attachment of firm customers, once attached these  
12 customers generally have no readily available alternative source of energy  
13 and depend on natural gas for their basic space heating or utility needs.  
14 During the Review Period, 60,974,994 dts, or approximately 93%, of  
15 Piedmont’s South Carolina deliveries were to the firm market.

16 In the interruptible market, Piedmont competes on a month-to-  
17 month and day-to-day basis with alternative sources of energy, primarily fuel  
18 oil or propane and, to a lesser extent, coal or wood. These larger commercial  
19 and industrial customers will buy alternate fuels when they are less expensive  
20 than natural gas. During the Review Period, 4,501,090 dts, or approximately  
21 7% of Piedmont’s South Carolina deliveries were to the interruptible market.

22 **Q. How does Piedmont calculate its customer growth?**

1 A. Piedmont reviews historical customer additions, holds discussions with  
2 various business leaders/trade allies and field sales employees, and considers  
3 forecasts of local, regional and national business drivers (i.e., economic  
4 conditions, demographics, etc.) to derive its customer growth projections.

5 **Q. How did the Company calculate its Design Day requirements for Winter**  
6 **2019 - 2020?**

7 A. Piedmont's Design Day calculations for Winter 2019 - 2020 were performed  
8 using the same methodology as described in last year's Annual Review  
9 proceeding. Specifically, all of the usage data was refreshed utilizing the  
10 actual customer sendout data from November 2014 through March 2019  
11 which included the most current winter weather experience for all customer  
12 classes. Second, linear regression analyses were conducted to determine the  
13 base load and the usage per heating degree day based on all of the newly  
14 refreshed data. The Company also constructed a load duration curve to  
15 forecast the Company's firm sales market requirements for design winter  
16 weather conditions. The supply requirements were plotted in descending  
17 order of magnitude, with existing pipeline capacity and storage resources  
18 overlaid to expose any supply shortfalls. The load duration curves for the  
19 2019 - 2020 **forecasted** design winter season, as well as the **actual** 2019 -  
20 2020 winter season are shown in **Exhibits\_\_ (JCP-1A and JCP-1B)**. The  
21 load duration curve for the 2020 - 2021 forecasted design winter season is  
22 shown in **Exhibit\_\_ (JCP-2)**.

1 **Q. Has the Company made any changes to its calculation of Design Day**  
2 **requirements for the future?**

3 A. The Company is utilizing the same methodology as described above,  
4 refreshed to include actual customer sendout data from Winter 2019 - 2020  
5 for the calculation of the Design Day requirement to be effective with this  
6 coming winter – Winter 2020 – 2021, however, the historical weather data,  
7 including the Winter 2019-2020 data, was reviewed to determine that the  
8 Design Day temperature should be slightly adjusted from 8.68 to 8.71 degrees  
9 Fahrenheit.

10 **Q. Please provide a walkthrough of the Design Day demand calculation.**

11 A. The “System Design Day Firm Send Out” (line 1, **Exhibit\_\_ (JCP-4C)** is  
12 calculated by: 1) multiplying the number of heating degree days (“HDD”) in  
13 the Design Day by the usage per HDD as calculated in the regression analysis.  
14 This is then added to the base load number.<sup>1</sup> This number is then increased  
15 each successive year to take into account the forecasted net growth rate. 2)  
16 Any mid-year special firm sales pick up is added (line 2) and any mid-year  
17 movements from firm sales to firm transportation are subtracted (line 3). This  
18 creates a total System Design Day Sendout with net mid-year adjustments  
19 (line 4). 3) Any special contract firm sales commitment (line 5) is added to  
20 come up with the “Total Firm Design Day Demand” (line 6). 4) A five (5)  
21 percent reserve margin is then calculated (line 7) and is added to the “Total  
22 Firm Design Day Demand” (line 4) to come up with the “Subtotal Demand”

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<sup>1</sup> Formula: (Design Day HDDs x Usage per HDD)+Base Load = System Design Day Firm Sendout

1 (line 8). 5) The “Firm Transportation without Standby” (line 10) is  
2 represented as the total dekatherms consumed by all industrial firm  
3 transportation customers on the highest winter day usage for that customer  
4 class for the prior winter. This number is then subtracted from the “Subtotal  
5 Demand” resulting in the “Total Firm Sales Demand” (line 11) for that year.  
6 Each subsequent yearly Design Day forecast is derived by increasing the firm  
7 sales rate classes’ usage by multiplying the previous year’s projected usage  
8 times each succeeding year’s forecasted growth percentage.

9 **Q. What process does Piedmont undertake to acquire firm capacity to meet**  
10 **its growing sales market requirements?**

11 A. Piedmont secures incremental capacity to meet the growth requirements of its  
12 firm sales customers consistent with its “best cost” policy, as described in the  
13 testimony of Company Witness Todd Breece. To implement this policy,  
14 Piedmont attempts to contract for timely and cost-effective capacity that is  
15 tailored to the demand characteristics of its market. Piedmont evaluates  
16 interstate pipeline capacity and storage offerings expected to be available at  
17 the time that it is determined that additional future firm delivery service is  
18 required or prior to the expiration of existing firm delivery service contracts.  
19 The Company attempts to match the days of service of new incremental  
20 transportation capacity to the duration of its incremental demand on the most  
21 economical basis possible. Piedmont attempts to acquire peaking services to  
22 meet projected peak day demand, storage services to meet projected seasonal  
23 demand, and year-round firm transportation services to meet base load

1 demand and in order to provide available capacity for storage inventory  
2 replenishment. However, service choices are limited to those offered during  
3 the period being evaluated.

4 **Q. Does Piedmont believe that conservation measures utilized by customers**  
5 **are applicable when formulating Design Day calculations?**

6 A. Based on observable customer usage patterns, Piedmont believes  
7 conservation measures are generally being utilized by our customers, but  
8 Piedmont has not seen evidence that conservation/reduced usage is occurring  
9 during Design Day conditions or during extended cold weather snaps in  
10 winter. For example, during the winter of 2017-2018, a particularly cold  
11 weather event occurred which gave Piedmont an opportunity to refresh data  
12 and analyze our customers' behavior during extremely cold weather. As in  
13 the past, we continued to observe that customers tend to conserve for the first  
14 few days of colder temperatures before turning up the thermostat. However,  
15 once adjusted to a warmer setting, customers appear to become less focused  
16 on conservation and more focused on comfort and leave the thermostat at the  
17 warmer level for a few days even as temperatures start to moderate. This  
18 pattern is illustrated in **Exhibit\_\_ (JCP-3)**. Given what Piedmont  
19 experienced in the winter of 2017 - 2018 as a customer response to colder  
20 temperatures in this pattern, the Company is confident this conservative  
21 approach to Design Day forecasting is the most prudent approach. Our focus  
22 has been and continues to be to reliably serve our firm customers on a Design  
23 Day.



1 **Q. What were the Design Day demand requirements used by the Company**  
2 **for planning purposes during the Review Period, the amount of heating**  
3 **degree days, dekatherms per heating degree day, customer growth rates**  
4 **and supporting calculations used to determine the Design Day**  
5 **requirement amounts?**

6 A. Please see Exhibits\_\_ (JCP-4A, 4B and 4C).

7 **Q. What are the forecasted Design Day demand requirements used by the**  
8 **Company for planning purposes for the upcoming Winter 2020 - 2021**  
9 **and for the next four winter seasons, the amount of heating degree days,**  
10 **dekatherms per heating degree day, customer growth rates and**  
11 **supporting calculations used to determine the Design Day requirement**  
12 **amounts?**

13 A. Please see Exhibits\_\_ (JCP-5A, 5B, and 5C).

14 **Q. What were the estimated base load demand requirements of the firm**  
15 **market for the Review Period?**

16 A. Please see Exhibit\_\_ (JCP-4A).

17 **Q. What are the upcoming Winter 2020 - 2021 forecasted base load demand**  
18 **requirements for the next four years?**

19 A. Please see Exhibit\_\_ (JCP-5A).

20 **Q. Please describe how the Company plans to supply its estimated future**  
21 **growth requirements during the next four-year period beginning with**  
22 **the 2020 - 2021 winter season.**

23 A. Based on current forecasted projections, Piedmont believes that it has

1 sufficient supply and capacity rights to meet its customer needs for the 2020  
2 – 2021 winter season. The most recent projects of Transco’s Leidy Southeast  
3 expansion for 100,000 dts per day of year-round capacity and Transco’s  
4 Virginia Southside expansion for 20,000 dts per day went into service in late  
5 2015 and early 2016. Additionally, Piedmont has increased the Design Day  
6 output of its Bentonville liquefied natural gas (“LNG”) peaking facility from  
7 90,000 dts per day to 110,000 dts per day beginning in the 2020 – 2021 winter  
8 season. This 20,000 dts per day increase is a result of a combination of  
9 customer load growth in eastern North Carolina and system pipeline upgrades  
10 including the Pipeline 439 upgrade near Greenville, NC that went into service  
11 in early 2020. Together, the load growth along with the system piping  
12 upgrades, allow for increased take away volume to be utilized on a Design  
13 Day at the Bentonville LNG facility. Piedmont plans to supply its estimated  
14 future growth requirements for the 2021-2022 through 2024-2025 winter  
15 seasons through the addition of a LNG facility in Robeson County, NC  
16 (“Robeson LNG”) and the in-service of the Atlantic Coast Pipeline (“ACP”).  
17 Piedmont is currently constructing the Robeson LNG facility, and it is  
18 anticipated to be completed in the summer of 2021. The Robeson LNG  
19 facility is forecasted to provide 200,000 dts per day of peaking supply of  
20 natural gas during peak usage days starting in the 2021-2022 winter season.  
21 In 2014, the Company entered into a Precedent Agreement with ACP to add  
22 160,000 dts per day of additional capacity utilizing its “best cost” purchasing  
23 philosophy. The ACP capacity is scheduled to go into service in the first half

1 of 2022. The capacity portfolio for the 2021-2022 winter season and beyond  
2 will be restructured to include Robeson LNG using the “best cost” gas  
3 purchasing policy while taking into account the customer load profile. The  
4 removal of identified capacity contracts beginning with the 2021 - 2022  
5 winter season as detailed in **Exhibit\_\_ (JCP-5C)** represents an illustrative  
6 scenario in which Piedmont releases upstream capacity to restructure the  
7 portfolio based on the current forecasted projections.

8 **Q. Has the Company made any changes to its capacity rights during the**  
9 **Review Period?**

10 A. The Company did not make any changes to its capacity rights during the  
11 Review Period.

12 **Q. Does the Company plan for a reserve margin to accommodate statistical**  
13 **anomalies, unanticipated supply or capacity interruptions, force**  
14 **majeure, emergency gas usage or colder-than-design weather?**

15 A. Yes, the Company computes a five percent reserve margin and arranges for  
16 supply and capacity to provide delivery of the reserve margin for events such  
17 as those listed above. This reserve margin is reflected in **Exhibit\_\_ (JCP-**  
18 **5C).**

19 **Q. Is it possible to maintain capacity rights that exactly match Piedmont’s**  
20 **calculated Design Day demand plus reserve margin at all times?**

21 A. No. Capacity additions are acquired in “blocks” of additional transportation,  
22 storage, or LNG capacity, as current and future needs are identified to ensure  
23 Piedmont’s ability to serve its customers based on the options available at that

1 time. As a practical matter, this means that at any given moment in time,  
2 Piedmont's actual capacity assets will vary somewhat from its forecasted  
3 demand capacity requirements. This aspect of capacity planning is  
4 unavoidable but Piedmont attempts to mitigate the impact of any mismatch  
5 through its use of bridging services, capacity release, and off-system sales  
6 activities.

7 **Q. Please describe the Company's interest and position on any issues before**  
8 **the FERC that may have an impact on the Company's operations and a**  
9 **description of the status of each proceeding described.**

10 A. The Company routinely intervenes and participates in interstate natural gas  
11 pipeline proceedings before the FERC. A current summary of the proceedings  
12 in which Piedmont is a party is detailed in **Exhibit\_\_ (JCP-6)**.

13 **Q. Does this conclude your testimony?**

14 A. Yes, it does.